SEQUENCE LISTING

<110> DARST, SETH A.
CAMPBELL, ELIZABETH

<120> A CRYSTAL OF BACTERIAL CORE RNA POLYMERASE WITH RIFAMPICIN AND METHODS OF USE THEREOF

<130> IPT-012.02

<140> 10/783,206
<141> 2004-02-20

<150> 09/802,755
<151> 2001-03-09

<160> 30

<170> PatentIn Ver. 3.2

<210> 1
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<212> PRT
<213> Thermus aquaticus

<220>
<221> MOD_RES
<222> (1247)
<223> Variable amino acid

<400> 1

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Met Lys Lys Glu Val Arg Lys Val Arg Ile Ala Leu Ala Ser Pro Glu
  1               5                  10                  15

Lys Ile Arg Ser Trp Ser Tyr Gly Glu Val Glu Lys Pro Glu Thr Ile
             20                  25                  30

Asn Tyr Arg Thr Leu Lys Pro Glu Arg Asp Gly Leu Phe Asp Glu Arg
         35                  40                  45

Ile Phe Gly Pro Ile Lys Asp Tyr Glu Cys Ala Cys Gly Lys Tyr Lys
     50                  55                  60

Arg Gln Arg Phe Glu Gly Lys Val Cys Glu Arg Cys Gly Val Glu Val
 65                  70                  75                  80

Thr Arg Ser Ile Val Arg Arg Tyr Arg Met Gly His Ile Glu Leu Ala
                 85                  90                  95

Thr Pro Ala Ala His Ile Trp Phe Val Lys Asp Val Pro Ser Lys Ile
            100                 105                 110

Gly Thr Leu Leu Asp Leu Phe Ala Thr Glu Leu Glu Gln Val Leu Tyr
        115                 120                 125

Phe Asn Lys Tyr Ile Val Leu Asp Pro Lys Gly Ala Val Leu Asp Gly
    130                 135                 140
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```
Val Pro Val Glu Lys Arg Gln Leu Leu Thr Asp Glu Glu Tyr Arg Glu
145                 150                 155                 160

Leu Arg Tyr Gly Lys Gln Glu Thr Tyr Pro Leu Pro Ala Gly Val Asp
                165                 170                 175

Ala Leu Val Lys Asp Gly Glu Glu Val Val Lys Gly Gln Glu Leu Ala
            180                 185                 190

Pro Gly Val Val Ser Arg Met Asp Gly Val Gly Ser Leu Pro Leu Pro
        195                 200                 205

Arg Arg Val Arg Val Asp Tyr Leu Arg Lys Glu Arg Ala Ala Leu Arg
    210                 215                 220

Ile Pro Leu Ser Ala Trp Val Glu Lys Glu Pro Tyr Arg Pro Gly Glu
225                 230                 235                 240

Val Leu Ala Glu Leu Ser Glu Pro Tyr Leu Phe Arg Ala Glu Glu Ser
                245                 250                 255

Gly Val Val Glu Leu Lys Asp Leu Ala Glu Gly His Leu Ile Tyr Leu
            260                 265                 270

Arg Gln Glu Glu Glu Val Val Ala Arg Tyr Phe Leu Pro Ala Gly Met
        275                 280                 285

Thr Pro Leu Val Val Glu Gly Glu Ile Val Glu Val Gly Gln Pro Leu
    290                 295                 300

Ala Glu Gly Lys Gly Leu Leu Arg Leu Pro Arg His Met Thr Ala Lys
305                 310                 315                 320

Glu Val Glu Ala Glu Glu Glu Gly Asp Ser Val His Leu Thr Leu Phe
                325                 330                 335

Leu Glu Trp Thr Glu Pro Lys Asp Tyr Lys Val Ala Pro His Met Asn
            340                 345                 350

Val Ile Val Pro Glu Gly Ala Lys Val Gln Ala Gly Glu Lys Ile Val
        355                 360                 365

Ala Ala Ile Asp Pro Glu Glu Glu Val Ile Ala Gln Ala Glu Gly Val
    370                 375                 380

Val His Leu His Glu Pro Ala Ser Ile Leu Val Val Lys Ala Arg Val
385                 390                 395                 400

Tyr Pro Phe Glu Asp Asp Val Glu Val Thr Thr Gly Asp Arg Val Ala
                405                 410                 415

Pro Gly Asp Val Leu Ala Asp Gly Gly Lys Val Lys Ser Glu Ile Tyr
            420                 425                 430

Gly Arg Val Glu Val Asp Leu Val Arg Asn Val Val Arg Val Val Glu
        435                 440                 445
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```
Ser Tyr Asp Ile Asp Ala Arg Met Gly Ala Glu Ala Ile Gln Glu Leu
    450                 455                 460

Leu Lys Glu Leu Asp Leu Glu Lys Leu Glu Arg Glu Leu Leu Glu Glu
465                 470                 475                 480

Met Lys His Pro Ser Arg Ala Arg Arg Ala Lys Ala Arg Lys Arg Leu
                485                 490                 495

Glu Val Val Arg Ala Phe Leu Asp Ser Gly Asn Arg Pro Glu Trp Met
            500                 505                 510

Ile Leu Glu Ala Val Pro Val Leu Pro Pro Asp Leu Arg Pro Met Val
        515                 520                 525

Gln Val Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu Asn Asp Leu Tyr
    530                 535                 540

Arg Arg Leu Ile Asn Arg Asn Asn Arg Leu Lys Lys Leu Leu Ala Gln
545                 550                 555                 560

Gly Ala Pro Glu Ile Ile Ile Arg Asn Glu Lys Arg Met Leu Gln Glu
                565                 570                 575

Ala Val Asp Ala Val Ile Asp Asn Gly Arg Arg Gly Ser Pro Val Thr
            580                 585                 590

Asn Pro Gly Ser Glu Arg Pro Leu Arg Ser Leu Thr Asp Ile Leu Ser
        595                 600                 605

Gly Lys Gln Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys Arg Val Asp
    610                 615                 620

Tyr Ser Gly Arg Ser Val Ile Val Val Gly Pro Gln Leu Lys Leu His
625                 630                 635                 640

Gln Cys Gly Leu Pro Lys Arg Met Ala Leu Glu Leu Phe Lys Pro Phe
                645                 650                 655

Leu Leu Lys Lys Met Glu Glu Lys Ala Phe Ala Pro Asn Val Lys Ala
            660                 665                 670

Ala Arg Arg Met Leu Glu Arg Gln Arg Asp Ile Lys Asp Glu Val Trp
        675                 680                 685

Asp Ala Leu Glu Glu Val Ile His Gly Lys Val Val Leu Leu Asn Arg
    690                 695                 700

Ala Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Gln Pro Val Leu
705                 710                 715                 720

Val Glu Gly Gln Ser Ile Gln Leu His Pro Leu Val Cys Glu Ala Phe
                725                 730                 735

Asn Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser
            740                 745                 750
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Ser Phe Ala Gln Ala Glu Ala Arg Ile Gln Met Leu Ser Ala His Asn
        755                 760                 765

Leu Leu Ser Pro Ala Ser Gly Glu Pro Leu Ala Lys Pro Ser Arg Asp
    770                 775                 780

Ile Ile Leu Gly Leu Tyr Tyr Ile Thr Gln Val Arg Lys Glu Lys Lys
785                 790                 795                 800

Gly Ala Gly Met Ala Phe Ala Thr Pro Glu Glu Ala Leu Ala Ala Tyr
                805                 810                 815

Glu Arg Gly Glu Val Ala Leu Asn Ala Pro Ile Val Val Ala Gly Arg
            820                 825                 830

Glu Thr Ser Val Gly Arg Leu Lys Phe Val Phe Ala Asn Pro Asp Glu
        835                 840                 845

Ala Leu Leu Ala Val Ala His Gly Leu Leu Asp Leu Gln Asp Val Val
    850                 855                 860

Thr Val Arg Tyr Leu Gly Arg Arg Leu Glu Thr Asn Pro Gly Arg Ile
865                 870                 875                 880

Leu Phe Ala Arg Ile Val Gly Glu Ala Val Gly Asp Glu Lys Val Ala
                885                 890                 895

Gln Glu Leu Ile Gln Met Asp Val Pro Gln Glu Lys Asn Ser Leu Lys
            900                 905                 910

Asp Leu Val Tyr Gln Ala Phe Leu Arg Leu Gly Met Glu Lys Thr Ala
        915                 920                 925

Arg Leu Leu Asp Ala Leu Lys Tyr Tyr Gly Phe Thr Leu Ser Thr Thr
    930                 935                 940

Ser Gly Ile Ile Thr Ile Gly Ile Asp Asp Ala Val Ile Pro Glu Glu
945                 950                 955                 960

Lys Gln Arg Tyr Leu Glu Glu Ala Asp Arg Lys Leu Arg Gln Ile Glu
                965                 970                 975

Gln Ala Tyr Glu Met Gly Phe Leu Thr Asp Arg Glu Arg Tyr Asp Gln
            980                 985                 990

Val Ile Gln Leu Trp Thr Glu Thr Thr Glu Lys Val Thr Gln Ala Val
        995                1000                1005

Phe Asn Asn Phe Glu Glu Asn Tyr Pro Phe Asn Pro Leu Tyr Val Met
   1010                1015                1020

Ala Gln Ser Gly Ala Arg Gly Asn Pro Gln Gln Ile Arg Gln Leu Cys
1025                1030                1035                1040

Gly Met Arg Gly Leu Met Gln Lys Pro Ser Gly Glu Thr Phe Glu Val
                1045                1050                1055
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```
Pro Val Arg Ser Ser Phe Arg Glu Gly Leu Thr Val Leu Glu Tyr Phe
          1060                1065                1070

Ile Ser Ser His Gly Ala Arg Lys Gly Gly Ala Asp Thr Ala Leu Arg
       1075                1080                1085

Thr Ala Asp Ser Gly Tyr Leu Thr Arg Lys Leu Val Asp Val Ala His
   1090                1095                1100

Glu Ile Val Val Arg Glu Ala Asp Cys Gly Thr Thr Lys Tyr Ile Ser
1105                1110                1115                1120

Val Pro Leu Phe Gln Met Asp Glu Val Thr Arg Thr Leu Arg Leu Arg
               1125                1130                1135

Lys Arg Ser Asp Ile Glu Ser Gly Leu Tyr Gly Arg Val Leu Ala Arg
          1140                1145                1150

Glu Val Glu Ala Leu Gly Arg Arg Leu Glu Glu Gly Arg Tyr Leu Ser
       1155                1160                1165

Leu Glu Asp Val His Phe Leu Ile Lys Ala Ala Glu Ala Gly Glu Val
   1170                1175                1180

Arg Glu Val Pro Val Arg Ser Pro Leu Thr Cys Gln Thr Arg Tyr Gly
1185                1190                1195                1200

Val Cys Gln Lys Cys Tyr Gly Tyr Asp Leu Ser Met Ala Arg Pro Val
               1205                1210                1215

Ser Ile Gly Glu Ala Val Gly Val Val Ala Ala Glu Ser Ile Gly Glu
          1220                1225                1230

Pro Gly Thr Gln Leu Thr Met Arg Thr Phe His Thr Gly Gly Xaa Ala
       1235                1240                1245

Val Gly Thr Asp Ile Thr Gln Gly Leu Pro Arg Val Ile Glu Leu Phe
   1250                1255                1260

Glu Ala Arg Arg Pro Lys Ala Lys Ala Val Ile Ser Glu Ile Asp Gly
1265                1270                1275                1280

Val Val Arg Ile Glu Glu Gly Glu Asp Arg Leu Ser Val Phe Val Glu
               1285                1290                1295

Ser Glu Gly Phe Ser Lys Glu Tyr Lys Leu Pro Lys Asp Ala Arg Leu
          1300                1305                1310

Leu Val Lys Asp Gly Asp Tyr Val Glu Ala Gly Gln Pro Leu Thr Arg
       1315                1320                1325

Gly Ala Ile Asp Pro His Gln Leu Leu Glu Ala Lys Gly Pro Glu Ala
   1330                1335                1340

Val Glu Arg Tyr Leu Val Asp Glu Ile Gln Lys Val Tyr Arg Ala Gln
1345                1350                1355                1360
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Gly Val Lys Leu His Asp Lys His Ile Glu Ile Val Val Arg Gln Met
                1365                1370                1375

Leu Lys Tyr Val Glu Val Thr Asp Pro Gly Asp Ser Pro Leu Leu Glu
            1380                1385                1390

Gly Gln Val Leu Glu Lys Trp Asp Val Glu Ala Leu Asn Glu Arg Leu
        1395                1400                1405

Ile Ala Glu Gly Lys Val Pro Val Ala Trp Lys Pro Leu Leu Met Gly
    1410                1415                1420

Val Thr Lys Ser Ala Leu Ser Thr Lys Ser Trp Leu Ser Ala Ala Ser
1425                1430                1435                1440

Phe Gln Asn Thr Thr His Val Leu Thr Glu Ala Ala Ile Ala Gly Lys
                1445                1450                1455

Lys Asp Glu Leu Ile Gly Leu Lys Glu Asn Val Ile Leu Gly Arg Leu
            1460                1465                1470

Ile Pro Ala Gly Thr Gly Ser Asp Phe Val Arg Phe Thr Gln Val Val
        1475                1480                1485

Asp Gln Arg Thr Leu Lys Ala Ile Glu Glu Ala Arg Lys Glu Ala Val
    1490                1495                1500

Glu Ala Lys Glu Lys Glu Ala Pro Arg Arg Pro Val Arg Arg Glu Gln
1505                1510                1515                1520

Pro Gly Lys Gly Leu
                1525
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<210> 2
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<212> PRT
<213> Thermus aquaticus

<220>
<221> MOD_RES
<222> (695)..(696)
<223> Variable amino acid

<400> 2

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Pro Leu Thr Glu Ile Gln Val Glu Ser Tyr Lys Lys Ala Leu Gln Ala
             20                  25                  30

Asp Val Pro Pro Glu Lys Arg Glu Asn Val Gly Ile Gln Ala Ala Phe
         35                  40                  45

Lys Glu Thr Phe Pro Ile Glu Glu Gly Asp Lys Gly Lys Gly Gly Leu
     50                  55                  60
```

```
Val Leu Asp Phe Leu Glu Tyr Arg Ile Gly Asp Pro Pro Phe Ser Gln
 65                  70                  75                  80

Asp Glu Cys Arg Glu Lys Asp Leu Thr Tyr Gln Ala Pro Leu Tyr Ala
                 85                  90                  95

Arg Leu Gln Leu Ile His Lys Asp Thr Gly Leu Ile Lys Glu Asp Glu
            100                 105                 110

Val Phe Leu Gly His Leu Pro Leu Met Thr Glu Asp Gly Ser Phe Ile
        115                 120                 125

Ile Asn Gly Ala Asp Arg Val Ile Val Ser Gln Ile His Arg Ser Pro
    130                 135                 140

Gly Val Tyr Phe Thr Pro Asp Pro Ala Arg Pro Gly Arg Tyr Ile Ala
145                 150                 155                 160

Ser Ile Ile Pro Leu Pro Lys Arg Gly Pro Trp Ile Asp Leu Glu Val
                165                 170                 175

Glu Ala Ser Gly Val Val Thr Met Lys Val Asn Lys Arg Lys Phe Pro
            180                 185                 190

Leu Val Leu Leu Leu Arg Val Leu Gly Tyr Asp Gln Glu Thr Leu Val
        195                 200                 205

Arg Glu Leu Ser Ala Tyr Gly Asp Leu Val Gln Gly Leu Leu Asp Glu
    210                 215                 220

Ala Val Leu Ala Met Arg Pro Glu Glu Ala Met Val Arg Leu Phe Thr
225                 230                 235                 240

Leu Leu Arg Pro Gly Asp Pro Pro Lys Lys Asp Lys Ala Leu Ala Tyr
                245                 250                 255

Leu Phe Gly Leu Leu Ala Asp Pro Lys Arg Tyr Asp Leu Gly Glu Ala
            260                 265                 270

Gly Arg Tyr Lys Ala Glu Glu Lys Leu Gly Val Gly Leu Ser Gly Arg
        275                 280                 285

Thr Leu Val Arg Phe Glu Asp Gly Glu Phe Lys Asp Glu Val Phe Leu
    290                 295                 300

Pro Thr Leu Arg Tyr Leu Phe Ala Leu Thr Ala Gly Val Pro Gly His
305                 310                 315                 320

Glu Val Asp Asp Ile Asp His Leu Gly Asn Arg Arg Ile Arg Thr Val
                325                 330                 335

Gly Glu Leu Met Ala Asp Gln Phe Arg Val Gly Leu Ala Arg Leu Ala
            340                 345                 350

Arg Gly Val Arg Glu Arg Met Val Met Gly Ser Pro Asp Thr Leu Thr
        355                 360                 365
```

```
Pro Ala Lys Leu Val Asn Ser Arg Pro Leu Glu Ala Ala Leu Arg Glu
    370                 375                 380

Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Lys Asp Glu Thr Asn Pro
385                 390                 395                 400

Leu Ser Ser Leu Arg His Lys Arg Arg Ile Ser Ala Leu Gly Pro Gly
                405                 410                 415

Gly Leu Thr Arg Glu Arg Ala Gly Phe Asp Val Arg Asp Val His Arg
            420                 425                 430

Thr His Tyr Gly Arg Ile Cys Pro Val Glu Thr Pro Glu Gly Ala Asn
        435                 440                 445

Ile Gly Leu Ile Thr Ser Leu Ala Ala Tyr Ala Arg Val Asp Ala Leu
    450                 455                 460

Gly Phe Ile Arg Thr Pro Tyr Arg Arg Val Lys Asn Gly Val Val Thr
465                 470                 475                 480

Glu Glu Val Val Tyr Met Thr Ala Ser Glu Glu Asp Arg Tyr Thr Ile
                485                 490                 495

Ala Gln Ala Asn Thr Pro Leu Glu Gly Asp Arg Ile Ala Thr Asp Arg
            500                 505                 510

Val Val Ala Arg Arg Arg Gly Glu Pro Val Ile Val Ala Pro Glu Glu
        515                 520                 525

Val Glu Phe Met Asp Val Ser Pro Lys Gln Val Phe Ser Leu Asn Thr
    530                 535                 540

Asn Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met
545                 550                 555                 560

Gly Ser Asn Met Gln Thr Gln Ala Val Pro Leu Ile Arg Ala Gln Ala
                565                 570                 575

Pro Val Val Met Thr Gly Leu Glu Glu Arg Val Val Arg Asp Ser Leu
            580                 585                 590

Ala Ala Leu Tyr Ala Glu Glu Asp Gly Glu Val Val Lys Val Asp Gly
        595                 600                 605

Thr Arg Ile Ala Val Arg Tyr Glu Asp Gly Arg Leu Val Glu His Pro
    610                 615                 620

Leu Arg Arg Tyr Ala Arg Ser Asn Gln Gly Thr Ala Phe Asp Gln Arg
625                 630                 635                 640

Pro Arg Val Arg Val Gly Gln Arg Val Lys Lys Gly Asp Leu Leu Ala
                645                 650                 655

Asp Gly Pro Ala Ser Glu Glu Gly Phe Leu Ala Leu Gly Gln Asn Val
            660                 665                 670
```

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Leu Val Ala Ile Met Pro Phe Asp Gly Tyr Asn Phe Glu Asp Ala Ile
        675                 680                 685

Val Ile Ser Glu Glu Leu Xaa Xaa Arg Asp Phe Tyr Thr Ser Ile His
    690                 695                 700

Ile Glu Arg Tyr Glu Ile Glu Ala Arg Asp Thr Lys Leu Gly Pro Glu
705                 710                 715                 720

Arg Ile Thr Arg Asp Ile Pro His Leu Ser Glu Ala Ala Leu Arg Asp
                725                 730                 735

Leu Asp Glu Glu Gly Ile Val Arg Ile Gly Ala Glu Val Lys Pro Gly
            740                 745                 750

Asp Ile Leu Val Gly Arg Thr Ser Phe Lys Gly Glu Gln Glu Pro Ser
        755                 760                 765

Pro Glu Glu Arg Leu Leu Arg Ser Ile Phe Gly Glu Lys Ala Arg Asp
    770                 775                 780

Val Lys Asp Thr Ser Leu Arg Val Pro Pro Gly Glu Gly Gly Ile Val
785                 790                 795                 800

Val Gly Arg Leu Arg Leu Arg Arg Gly Asp Pro Gly Val Glu Leu Lys
                805                 810                 815

Pro Gly Val Arg Glu Val Val Arg Val Phe Val Ala Gln Lys Arg Lys
            820                 825                 830

Leu Gln Val Gly Asp Lys Leu Ala Asn Arg His Gly Asn Lys Gly Val
        835                 840                 845

Val Ala Lys Ile Leu Pro Val Glu Asp Met Pro His Leu Pro Asp Gly
    850                 855                 860

Thr Pro Val Asp Val Ile Leu Asn Pro Leu Gly Val Pro Ser Arg Met
865                 870                 875                 880

Asn Leu Gly Gln Ile Leu Glu Thr His Leu Gly Leu Ala Gly Tyr Phe
                885                 890                 895

Leu Gly Gln Arg Tyr Ile Ser Pro Val Phe Asp Gly Ala Thr Glu Pro
            900                 905                 910

Glu Ile Lys Glu Leu Leu Ala Glu Ala Phe Asn Leu Tyr Phe Gly Lys
        915                 920                 925

Arg Gln Gly Glu Gly Phe Gly Val Asp Lys Arg Glu Lys Glu Val Leu
    930                 935                 940

Ala Arg Ala Glu Lys Leu Gly Leu Val Ser Pro Gly Lys Ser Pro Glu
945                 950                 955                 960

Glu Gln Leu Lys Glu Leu Phe Asp Leu Gly Lys Val Val Leu Tyr Asp
                965                 970                 975
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```
Gly Arg Thr Gly Glu Pro Phe Glu Gly Pro Ile Val Val Gly Gln Met
            980                 985                 990

Phe Ile Met Lys Leu Tyr His Met Val Glu Asp Lys Met His Ala Arg
        995                1000                1005

Ser Thr Gly Pro Tyr Ser Leu Ile Thr Gln Gln Pro Leu Gly Gly Lys
   1010                1015                1020

Ala Gln Phe Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu
1025                1030                1035                1040

Glu Ala Tyr Gly Ala Ala His Thr Leu Gln Glu Met Leu Thr Ile Lys
               1045                1050                1055

Ser Asp Asp Ile Glu Gly Arg Asn Ala Ala Tyr Gln Ala Ile Ile Lys
           1060                1065                1070

Gly Glu Asp Val Pro Glu Pro Ser Val Pro Glu Ser Phe Arg Val Leu
       1075                1080                1085

Val Lys Glu Leu Gln Ala Leu Ala Leu Asp Val Gln Thr Leu Asp Glu
   1090                1095                1100

Lys Asp Asn Pro Val Asp Ile Phe Glu Gly Leu Ala Ser Lys Arg
1105                1110                1115


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<212> PRT
<213> Thermus aquaticus

<400> 3
Met Leu Glu Ser Lys Leu Lys Ala Pro Val Phe Thr Ala Thr Thr Gln
  1               5                  10                  15

Gly Asp His Tyr Gly Glu Phe Val Leu Glu Pro Leu Glu Arg Gly Phe
             20                  25                  30

Gly Val Thr Leu Gly Asn Pro Leu Arg Arg Ile Leu Leu Ser Ser Ile
         35                  40                  45

Pro Gly Thr Ala Val Thr Ser Val Tyr Ile Glu Asp Val Leu His Glu
     50                  55                  60

Phe Ser Thr Ile Pro Gly Val Lys Glu Asp Val Val Glu Ile Ile Leu
 65                  70                  75                  80

Asn Leu Lys Glu Leu Val Val Arg Phe Leu Asp Pro Arg Trp Arg Thr
                 85                  90                  95

Thr Leu Ile Leu Arg Ala Glu Gly Pro Lys Glu Val Arg Ala Val Asp
            100                 105                 110
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```
Phe Thr Pro Ser Ala Asp Val Glu Ile Met Asn Pro Asp Leu His Ile
        115                 120                 125

Ala Thr Leu Glu Glu Gly Gly Lys Leu Tyr Met Glu Val Arg Val Asp
    130                 135                 140

Arg Gly Val Gly Tyr Val Pro Ala Glu Arg His Gly Ile Lys Asp Arg
145                 150                 155                 160

Ile Asn Ala Ile Pro Val Asp Ala Ile Phe Ser Pro Val Arg Arg Val
                165                 170                 175

Ala Phe Gln Val Glu Asp Thr Arg Leu Gly Gln Arg Thr Asp Leu Asp
            180                 185                 190

Lys Leu Thr Leu Arg Ile Trp Thr Asp Gly Ser Val Thr Pro Leu Glu
        195                 200                 205

Ala Leu Asn Gln Ala Val Ala Ile Leu Lys Glu His Leu Asn Tyr Phe
    210                 215                 220

Ala Asn Pro Glu Ala Ser Leu Leu Pro Thr Pro Glu Val Ser Lys Gly
225                 230                 235                 240

Glu Lys Arg Glu Ser Ala Glu Glu Asp Leu Asp Leu Pro Leu Glu Glu
                245                 250                 255

Leu Gly Leu Ser Thr Arg Val Leu His Ser Leu Lys Glu Glu Gly Ile
            260                 265                 270

Glu Ser Val Arg Ala Leu Leu Ala Leu Asn Leu Lys Asp Leu Arg Asn
        275                 280                 285

Ile Pro Gly Ile Gly Glu Arg Ser Leu Glu Glu Ile Arg Gln Ala Leu
    290                 295                 300

Ala Lys Lys Gly Phe Thr Leu Lys Glu
305                 310
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<210> 4
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<212> PRT
<213> Thermus aquaticus

<400> 4

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Met Ala Glu Pro Gly Ile Asp Lys Leu Phe Gly Met Val Asp Ser Lys
  1               5                  10                  15

Tyr Arg Leu Thr Val Val Val Ala Lys Arg Ala Gln Gln Leu Leu Arg
             20                  25                  30

His Arg Phe Lys Asn Thr Val Leu Glu Pro Glu Glu Arg Pro Lys Met
         35                  40                  45

Arg Thr Leu Glu Gly Leu Tyr Asp Asp Pro Asn Ala Val Thr Trp Ala
     50                  55                  60
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```
Met Lys Glu Leu Leu Thr Gly Arg Leu Phe Phe Gly Glu Asn Leu Val
 65                  70                  75                  80

Pro Glu Asp Arg Leu Gln Lys Glu Met Glu Arg Leu Tyr Pro Thr Glu
                85                  90                  95

Glu Glu Ala
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<210> 5
<211> 6
<212> PRT
<213> Escherichia coli

<220>
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<222> (4)
<223> Val or Phe

<400> 5
Arg Val Ile Xaa Ser Gln
  1   5

<210> 6
<211> 35
<212> PRT
<213> Escherichia coli

<220>
<221> MISC_FEATURE
<222> (3)..(7)
<223> residues may or may not be present or may be replaced by Val

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<221> MOD_RES
<222> (8)
<223> Pro, Phe or Ser

<220>
<221> MOD_RES
<222> (9)
<223> Arg, Pro, Leu or Gln

<220>
<221> MOD_RES
<222> (12)
<223> Tyr, Asn, Val or Asp

<220>
<221> MOD_RES
<222> (20)
<223> Phe or Ser

<220>
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<222> (24)
<223> Gln, Arg, Pro, Tyr or His

<220>
<221> MOD_RES
<222> (27)
<223> His, Leu, Cys, Ser or Arg

<220>
<221> MOD_RES
<222> (29)
<223> Phe, Tyr or Ser

<220>
<221> MOD_RES
<222> (30)
<223> Val, Glu, Ala or not present

<220>
<221> MOD_RES
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<223> Pro or Leu

<220>
<221> MOD_RES
<222> (32)
<223> Asp or Gly

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Phe Phe Gly Ser Ser Gln Leu Xaa Xaa Phe Met Xaa Gln Asp Gln Asn
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Asn Pro Leu Xaa Glu Ile Thr Xaa Lys Arg Xaa Ile Xaa Xaa Xaa Xaa
20 25 30

Pro Gly Gly
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<210> 7
<211> 14
<212> PRT
<213> Escherichia coli

<220>
<221> MOD_RES
<222> (2)
<223> Pro or Thr

<220>
<221> MOD_RES
<222> (3)
<223> Leu or Pro

<220>
<221> MOD_RES
<222> (11)..(12)
<223> Phe

<400> 7
Glu Xaa Xaa Glu Gly Pro Asn Ile Gly Leu Xaa Xaa Ser Leu
1 5 10

<210> 8
<211> 7
<212> PRT
<213> Escherichia coli

<220>
<221> MOD_RES
<222> (4)
<223> His or Arg

<400> 8
Asn Met Gln Xaa Gln Ala Val
1 5

<210> 9
<211> 6
<212> PRT
<213> Thermus aquaticus

<400> 9
Arg Val Ile Val Ser Gln
1 5

<210> 10
<211> 33
<212> PRT
<213> Thermus aquaticus

<400> 10
Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Lys Asp Glu Thr Asn Pro
1 5 10 15

Leu Ser Ser Leu Arg His Lys Arg Arg Ile Ser Ala Leu Gly Pro Gly
20 25 30

Gly

<210> 11
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<212> PRT
<213> Thermus aquaticus

<400> 11
Glu Thr Pro Glu Gly Ala Asn Ile Gly Leu Ile Thr Ser Leu
1 5 10

<210> 12
<211> 7
<212> PRT
<213> Thermus aquaticus

<400> 12
Asn Met Gln Thr Gln Ala Val
1 5

<210> 13
<211> 6
<212> PRT
<213> Mycobacterium tuberculosis

<220>
<221> MOD_RES
<222> (4)
<223> Val or Phe

<400> 13
Arg Val Val Xaa Ser Gln
1 5

<210> 14
<211> 34
<212> PRT
<213> Mycobacterium tuberculosis

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<222> (3)
<223> Asp or Gly

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<223> Gln or His

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<223> Leu, Pro or Thr

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<221> MOD_RES
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<223> Ser or THr

<220>
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<222> (9)
<223> Gln, Leu, Lys or Pro

<220>
<221> MOD_RES
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<223> Phe or Leu

<220>
<221> MOD_RES
<222> (11)
<223> Met, Ile or Val

<220>
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<223> Asp, Val, Tyr, Glu, Gly or Ala

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<223> Asn or HIs

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<223> Ser or Leu

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<223> Thr, Cys, Gly or Asn

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<223> His, Tyr, Asp, Arg, Leu or Pro

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<223> Lys, Thr, Gln or Glu

<220>
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<222> (28)
<223> Ser, Leu, Trp, Cys, Gln, or Tyr

<220>
<221> MOD_RES
<222> (30)
<223> Leu or Pro

<400> 14
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1 5 10 15

Xaa Xaa Gly Leu Xaa Xaa Xaa Arg Arg Asn Leu Xaa Ala Xaa Gly Pro
20 25 30

Gly Gly

<210> 15
<211> 14
<212> PRT
<213> Mycobacterium tuberculosis

<400> 15
Glu Thr Pro Glu Gly Pro Asn Ile Gly Leu Ile Gly Ser Leu
1 5 10

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